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THE USE OF LAPINISED VIRUS VACCINE TO SUPPRESS ACTIVE RINDERPEST IN SUSCEPTIBLE GRADE CATTLE

BY

J. G. BROTHERSTON, M.R.C.V.S.,

EAST AFRICAN VETERINARY RESEARCH ORGANISATION, KABETE, KENYA

Viable lyophilised vaccine, prepared from the tissues of rabbits infected with the " lapinised " strain of rinderpest virus, has been used successfully in East Africa since 1948 to immunise some types of cattle against rinderpest. A detailed paper on the vaccine and the results obtained with it is being prepared for publication. The natural disease had often been in the vicinity of cattle so immunised, but hitherto had never actually been present in the herds, and, consequently, particular interest was attached to the outbreak to be described, which presented the opportunity for a field trial of the protective properties of the vaccine in the face of severe infection. Pilot experiments at the laboratory had indicated that cattle inoculated with the vaccine resisted infection by parenteral challenge with virulent bovine virus within 100 hours after vaccination. This phenomenon was observed by Pfaff, G. (1938), working with attenuated goat virus vaccine, when he recorded that 0·00025 g. of dried virus induced a serviceable protection in cattle within 24 hours. Daubney and Hudson (1939) observed that attenuated goat virus afforded some protection in 48 hours and adequate protection in 72 hours, long before antibodies could have been produced.

History of Farm.—The farm lies in the Rift Valley, some 25 miles from the laboratory and produces both milk and beef. The cattle, with the exception of a few work oxen, were high grade animals of Hereford and Ayrshire breeds. No rinderpest immunisation had been carried out on this farm for at least ten years, consequently the cattle were highly susceptible.

Disposition of Herds and Management on the Farm.—The farm of 20,000 acres is divided by a main tarmacadam road, one-third of the acreage lying to the east and two-thirds to the west. To the east was situated the milking byre with ancillary buildings, the crush and the dip; the cattle comprised the two milking herds, the " in-calf " herd, the hand-reared calves, the pure-bred bulls, and a small herd of heifers running with two bulls. To the west there were five herds disposed over a large acreage; these consisted of an adult steer herd, two foster-mother herds, a " dry " herd and a herd of young steers and heifers. Activity was centred around the main buildings where milking was carried out twice daily, where the calves were housed and bucket-fed and where all cattle converged once a week for dipping.

Distribution of Disease.—By September 4th, 1950, a few deaths had occurred amongst the calves and three adult steers had died. No definite diagnosis could be made by *post-mortem* examination, but rinderpest was confirmed by herd examinations on September 6th. By this time 30 adult steers had severe clinical symptoms of rinderpest and many were ill, showing varying degrees of diarrhoea and lachrymation. Calves exhibited a similar syndrome. From the distribution of the herds it was noted that the disease was present on both sides of the farm and that all herds could have been exposed to infection when coming in to be dipped or milked. The cattle in closest contact with the infected calves were the milk cows and the bulls, while the young heifers and steers to the west had been grazing in close proximity to the infected adult steers. It was not possible nor desirable to examine herds other than those already infected, but animals with clinical manifestations of rinderpest were seen when the various herds were presented for inoculation.

Action Taken.—The owner was informed that three courses were available: (1) To inoculate on three successive occasions at intervals of one week with formalised spleen vaccine, which, while it would eventually protect, would not induce immunity for at least ten days following the first inoculation. (2) To inoculate with Kabete attenuated goat virus vaccine (K.A.G.), which would certainly check the disease, but which would also severely affect general condition and milk yield and possibly cause some mortality in grade cattle. (3) To inoculate with lapinised virus vaccine, which was still in the experimental stage. It was explained that laboratory trials of this vaccine were favourable and that its use in grade cattle was not likely to cause a severe reaction. The owner elected the third alternative for all his stock except the adult steer herd, in which the disease was already rife.

The lapinised virus vaccine used was batch K 21. On titration at the laboratory the minimum immunising dose of this batch which would protect cattle against a subcutaneous inoculation of virulent bovine virus was 0·005 g. On the farm a dose of 0·01 g. in 2 ml. normal saline was given subcutaneously, so that each animal treated received 20 minimum immunising doses.

RESULTS AFTER TREATMENT IN HERDS

In addition to the calves and adult steers, symptoms of rinderpest were noted at the time of inoculating, in the milking cows, the bulls and the young steers and heifers. Rinderpest is also known to have been present among the " dry " and the " in-calf " cows, because animals showed typical symptoms immediately after inoculation, but recovered. No cattle in the two foster-herds were ill and none died.

It was impossible to estimate the number of infected animals which recovered, as, except for the milking cows, the distance between herds and the necessity for maintaining isolation prohibited handling of the cattle. The extent of disease in any herd has therefore been deduced from the number of deaths due to rinderpest in that herd, except in the case of the milking cows.

A summary of the history in each herd is given below, indicating the original numbers of animals, deaths which

occurred prior to vaccination, the treatment, and the number of animals which died after treatment.

Adult Steer Herd

As the disease was well established, it was decided to give 250 ml. of hyper-immune serum to advanced clinical cases and to treat the remainder with K.A.G.

Died of rinderpest prior to 7.9.50	3	Died	3
Treated K.A.G. 7.9.50	119	Died	51
Treated with serum 7.9.50	34	Died of natural rinderpest	20
Original herd ...	156	Loss	74

Calves Under Five Months Old

Only some 20 calves were given lapinised virus vaccine as the majority were showing severe symptoms of the disease and these were given serum.

Died of rinderpest prior to 7.9.50	6	Died	6
Given lapinised vaccine and/or serum 7.9.50	95	Died of natural rinderpest	66
Original herd ...	101	Loss	72

It is not possible to state what proportion of deaths occurred in calves given the vaccine.

Dairy Cattle

Died of rinderpest prior to 6.9.50	nil		
Treated lapinised vaccine 6.9.50	209	Died of natural rinderpest	22
Original herd ...	209	Loss	22

Altogether, some 40 cows were ill, of which about 18 recovered. The distribution of deaths shown below was significant, as this indicated the early protective power of the lapinised virus vaccine and that a number of cows were in the incubative and infective stages at the time of inoculation.

Died	8.9.50	2	
,,	9.9.50	2	
,,	10.9.50	1	
,,	12.9.50	1	
,,	13.9.50	1	
,,	14.9.50	1	
,,	15.9.50	2	
,,	16.9.50	11	
,,	30.9.50	1	
	Total ...	22	

The milk records cited showed that the majority of cows unaffected with the disease continued to milk satisfactorily.

Date	*Cows in Milk*	*Yield gallons*	*Average Yield gallons*
1.9.50 ...	140	303·25	2·2
6.9.50 ...	142	314·00	2·2
7.9.50 ...	144	305·00	2·1
12.9.50 ...	143	303·00	2·1
18.9.50 ...	136	275·50	2·0
25.9.50 ...	128	270·00	2·1

" In-calf " Herd

Died of rinderpest prior to 7.9.50	nil		
Treated lapinised vaccine 7.9.50	140	Died	nil
Original herd ...	140	Loss	nil

Several animals were noticed to be ill for two weeks following vaccination, with mild symptoms of rinderpest, but all recovered. Six cows produced dead calves at full term.

" Dry " Herd

Died of rinderpest prior to 7.9.50 ...	nil		
Treated lapinised vaccine 7.9.50	157	Died	nil
Original herd ...	157	Loss	nil

A small undetermined number of animals became ill, but all recovered.

Foster-mother Herds

These two herds were at the farthest point of the farm and away from the disease, but for dipping and inoculation they had to be brought to the central crush, which was also the focus of infection.

Died of rinderpest prior to vaccination	nil		
Treated lapinised vaccine 7.9.50	605	Died	nil
Original herd ...	605	Loss	nil

Work Oxen

These were Zebu cattle and had been working all over the farm.

Died of rinderpest prior to 7.9.50	nil		
Treated lapinised virus vaccine 7.9.50 ...	17	Died of natural rinderpest	1
Original herd ...	17	Loss	1

Pure-bred Bulls

Died of rinderpest prior to 6.9.50	nil		
Treated lapinised virus vaccine 6.9.50 ...	12	Died of natural rinderpest	4
Original herd ...	12	Loss	4

Heifers with Bulls

Died of rinderpest prior to 6.9.50	nil		
Treated with lapinised vaccine 6.9.50:—			
Pure-bred bulls ...	2		
Steers (Teasers) ...	2	Slaughtered, clinical	
Heifers	51	rinderpest ...	3
Original herd ...	55	Loss	3

Of three heifers which became ill on 30.9.50 two were slaughtered on 9.10.50 and the other the next day. These animals might have recovered, but were a continuing source of infection, so were eliminated. This herd was vaccinated with lapinised vaccine on 6.9.50, immediately after the dairy herd, and at this time none of the animals showed symptoms suggestive of rinderpest. The herd was grazed in close proximity to the milking cows both before and after vaccination, but when three heifers contracted rinderpest the herd was moved. It was assumed that all animals in the herd did not acquire immunity at the inoculation; on the other hand, as the remaining 52 animals showed no signs of illness on 11.10.50, it was assumed that infection had not spread as it would have done had they all remained fully susceptible. In order to test the immunity of this herd following the lapinised vaccine and to eliminate a possible focus of the disease, all cattle were given K.A.G. on 12.10.50.

To all appearances the herd remained healthy after this inoculation with K.A.G.; no animals were reported sick and no symptoms were seen. Temperatures were taken on 19.10.50, the eighth day following reinoculation and seven animals recorded a high temperature:—105·4, 105, 105, 104, 104, 103·8, 103·8° F. There were no mouth lesions, diarrhoea or other signs of rinderpest.

Young Heifers and Steers

Died of rinderpest prior to 7.9.50	nil			
Treated lapinised virus vaccine 7.9.50 ...	342	Died		20
Treated K.A.G. ...	92			
Original herd ...	434	Loss		20

This was the last herd on the farm to be inoculated, and 92 animals were given K.A.G. as available supplies of lapinised virus were exhausted.

A Summary of Mortality

Total of Animals Prior to Outbreak		*Died*
" In-calf " herd	140	nil
Dry herd	157	nil
*Foster-mother herd (1) ...	237	nil
*Foster-mother herd (2) ...	368	nil
Dairy herd	209	22
Adult steers	156	74
Calves	101	72
Oxen	17	1
Young heifers and steers ...	434	20
Bulls	12	4
Heifers with bulls	55	3
	1,886	196

Total Mortality 10 per cent.

* Herds which were uninfected before inoculation. All other herds were infected or exposed to infection prior to vaccination.

Situation on Neighbouring Farms

Three unfenced farms bordered the infected area to the west, and it was ascertained on 11.9.50 that no extension of the disease had occurred. All were carrying a proportion of susceptible, native and pure-bred stock and arrangements were made to inoculate them with lapinised virus vaccine:—

Farm M: 15.9.50

513 native cattle given lapinised virus vaccine.

16.9.50

7 pure-bred Ayrshire bulls given lapinised virus vaccine.

Farm S: 16.9.50

415 grade cattle, annual reinoculation with formalised spleen vaccine.

177 grade cattle given lapinised virus vaccine.

Farm K. M.:

57 native cattle given lapinised virus vaccine.

No evidence of rinderpest has been found on any of these farms eight weeks after vaccination.

Discussion

From the history of the disease on the farm under discussion it is evident that rinderpest appeared simultaneously in the young calves and adult steers. Although a few steers may have died from the effects of K.A.G., taking the disease sequence on the farm as a whole, it would serve no purpose to compare the efficiency of K.A.G. and of serum with that of lapinised virus, as rinderpest obviously obtained an earlier start in those two herds. In view of the mortality in adult steers and calves which received massive doses of serum, it is certain that the majority were already affected beyond hope of recovery.

From the other herds it is possible to obtain information about the efficacy of lapinised virus vaccine.

Milk Herd.—The cows had every opportunity to contract the disease by contact with the heavily infected calves and clinical cases were noticed among the cows when they were vaccinated. The greatest number of cattle died ten days after inoculation on 16.9.50 and it is postulated that these cattle and those dying on the preceding days contracted the infection before 8.9.50. It seems likely, therefore, that lapinised virus vaccine inoculated on 6.9.50 so interfered with the extension of the infection that rinderpest was prevented from decimating the herd.

The fact that the milk yield did not show a serious drop was also gratifying.

Bulls.—The pure-bred Ayrshire and Hereford animals suffered a comparatively high mortality, but were in close contact with the calves in which the disease started.

Young Heifer and Steer Herd.—Animals in this herd had the opportunity to contract infection from the adult steers and obviously did, as cases were noted at the time of inoculating. The mortality remained low however, but it was not possible to obtain the distribution of deaths owing to the inaccessibility of the herd. As 92 animals received goat virus (see p. 237, col 1), a few deaths may have been due to severe effects of reaction to this vaccine. The first deaths occurred after 10.9.50 and the last deaths before 30.9.50.

Foster-mother Herds.—No clinical cases were seen, and it was assumed that the animals did not contract infection before inoculation. At that time, and afterwards, it would be almost impossible for contact with the disease to have been avoided, either at the crush, or from the remains of carcases carried by carrion which flocked to the area. All cattle remained healthy in these two herds, which comprised nearly one-third of the number of animals given lapinised virus vaccine. There are therefore strong grounds for concluding that the losses and symptoms occurring in the other herds were not attributable to the vaccine used, but to natural rinderpest.

" Dry " Herd and " In-calf " Herd.—These cattle con-

tracted rinderpest in a mild form and although animals were seen to be ill all recovered and appeared normal four weeks after vaccination. That six cows each produced a dead calf at full term during this time is attributed to the effects of the natural disease. Previous experience had shown that lapinised vaccine used in 200 pregnant native cows of the Serenli breed did not cause either abortion or stillbirth of calves. (Paper in preparation.)

Heifer Herd with Bulls.—On evidence, it appears that three heifers contracted rinderpest and that seven remained susceptible after the original inoculation with lapinised virus vaccine. It must be remarked that the three animals were shot only to remove a source of infection and that the seven remaining susceptible reacted very mildly to K.A.G. The remaining 52 cattle resisted the inoculation with K.A.G., which in susceptible grade cattle would most certainly have provoked a marked reaction. There was no evidence of clinical rinderpest having spread amongst this herd.

Neighbouring Farms.—It is significant that the disease did not spread to neighbouring unfenced farms, in spite of the large focus of infection on the nearby farm and of the influx of carrion from carcases. Susceptible cattle were vaccinated on September 15th and 16th, about the time when cattle were beginning to die in large numbers on the infected farm.

SUMMARY

(1) Circumstances under which lapinised virus vaccine was used in highly susceptible grade cattle in the presence of active rinderpest are described.

(2) In a large milking herd, the vaccine appeared to curtail the course of the disease and to have little adverse effect on the milk yield.

(3) In other herds, either infected or with reasonable opportunities for contact, the vaccine established a firm immunity.

(4) The immunity established by the vaccine prevented extension of the disease to cattle on remote areas of the farm and to cattle on neighbouring farms.

Acknowledgments.—Thanks are due to Mr. E. Beaumont, the Director of Veterinary Services, Kenya, for the opportunity of making the observations recorded here; to Dr. H. S. Purchase, Chief Veterinary Research Officer, for advice in writing this communication; to Mr. M. P. Ford, the Veterinary Officer who diagnosed the disease and who supervised the control measures; and to Mr. D. A. Walker, the Veterinary Officer who obtained milk records and mortality figures. The paper is published by permission of Mr. H. R. Binns, the Acting Director of the East African Veterinary Research Organisation.

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In order to induce younger scientific workers to take an interest in the work of the British Association for the Advancement of Science and to raise the literary standard of scientific writing, Imperial Chemical Industries, Ltd., publisher of *Endeavour*, is again offering four prizes totalling 90 guineas to be awarded for an essay, not exceeding 4,000 words, on a given scientific subject. Competitors must be less than 25 years old and must send in their essays before June 1st. Further details of these prizes, which are to be known as *Endeavour* prizes, can be obtained from the Assistant Secretary, British Association for the Advancement of Science, Burlington House, Piccadilly, London, W.1.

THE ANIMALS (ANAESTHETICS) ACT, 1919—A PLEA FOR ITS REVISION

BY

F. J. MILNE, M.R.C.V.S.,

DEPARTMENT OF VETERINARY SURGERY AND CLINICS,
COLORADO A. & M. COLLEGE,
FORT COLLINS, COLORADO

From time to time when veterinarians gather for discussion, the topic of anaesthesia arises and with it The Animals (Anaesthetics) Act of 1919 (United Kingdom). This Act is a source of concern to the progressive veterinary surgeon who, in the light of the advances made in local anaesthesia since the Act was passed, considers it a very much outdated document sorely in need of revision. Especially is this the case when one considers the operations which, by law, must be performed under general anaesthesia and which we know may now be performed painlessly with less risk of untoward consequences to the patient if local anaesthesia is employed.

Wright, in the preface to the first edition of his "Veterinary Anaesthesia," says, "It is hoped that its publication at the present time will prove opportune in view of the possibility that The Animals (Anaesthetics) Act, 1919, may soon undergo revision." That statement was made nine years ago and since then only one amendment has been made—that permitting dehorning to be performed under a local anaesthetic.

Full agreement is expressed with Gold when he says, "Doubtless the good people who framed the Act were very able lawyers but they could not possibly have been veterinary surgeons."

This article is written in the hope that interest again may be stimulated and something done to correct the deficiencies of the present Act.

For the purpose of these notes the term "local anaesthesia" includes all the methods, such as infiltration, regional, spinal, etc., by which an operation can be performed painlessly on a conscious subject—this in accordance with Hall's definition.

That the Act is on occasions disregarded in Britain is well known. A British veterinarian quotes a case in a Jersey cow where he employed a "T"-shaped infiltration and successfully corrected a uterine torsion. The writer in performing caesarean section on a Shorthorn cow has delivered a viable foetus with the cow in the standing position eating hay from a rack whilst under the influence of only local infiltration of the skin, muscles and peritoneum.

The intention here is not to start a "general anaesthesia versus local anaesthesia" argument, for it is readily appreciated that much can be said for or against both methods, but it is desired that the surgeon, ever conscious of his humanitarian responsibilities, be given the choice of anaesthesia most suitable for the particular case upon which he contemplates operative surgery. To elaborate further, it is known that nerve blocking requires a careful and accurate technique to ensure success and even then anaesthesia is not always the reward of one's endeavours; for instance, Wright admits that in epidural anaesthesia in sheep he has had cases in which he has failed to make the injection into the epidural space, and Formston says that paravertebral lumbar anaesthesia even with good technique may be successful in only 90 per cent. of cases. The writer has failed on occasions to obtain anaesthesia, necessitating

the repetition of his earlier attempt and, if still unsuccessful, the employment of general anaesthesia.

Since general anaesthesia is the best means of restraint at our disposal, there are many occasions when the temperament of the animal will persuade the surgeon to use general in preference to local anaesthesia, even though for the purpose of surgery a local anaesthetic might be adequate; for instance, an unco-operative bull, even where adequate stocks are available, is more easily and satisfactorily dehorned by general than by local anaesthesia.

Now to analyse each schedule:—

Schedule 1.—This Schedule refers to equines and the tabled operations must be performed under general anaesthesia.

Ovariotomy in the mare may be and has been performed in the standing position under epidural anaesthesia supplemented by painting of the mesovarium with a cocaine-soaked swab prior to the application of the ecraseur. By this method the organs are not pushed out of their normal alignment by virtue of the mare being in recumbency and there is also less danger of damaging the iliac arteries when directing the knife through the tensed anterior wall of the vagina.

Scrotal and inguinal hernia operations require a general anaesthetic, but no mention is made of cryptorchidectomy, in which the surgeon may have to invade the abdominal cavity. Apart from humanitarian grounds, it is the writer's experience that the use of a general anaesthetic permits of muscular relaxation which allows a speedier and more efficiently performed operation. There is, however, an exception to that statement, for it has been found that with the horse merely narcotised, the introduction of the hand into the inguinal canal may cause the animal to struggle and the resulting increase of intra-abdominal pressure often will push an abdominal testicle against the processus vaginalis, where it may be picked up without the hand being placed inside the abdomen.

The equine and bovine apparently would be considered immune to the pain inflicted by castration as no mention is made of any form of anaesthesia for this operation.

Schedule 2.—Similarly in the 2nd Schedule, which applies to dogs and cats (general anaesthesia again being obligatory), the dog or cat aged five and a half months is not expected to manifest pain during castration, for only when it attains the age of six months is it entitled to anaesthesia and again a "general" is the law. Whilst in general practice in England, both doctor and dental surgeon and small-animal owners have expressed to me both horror and surprise that castration is performed to-day in Britain without necessarily using an anaesthetic on all domestic animals with the exception of dogs and cats over six months old.

The writer has encountered a case of prolapsed uterus in a toxic bitch where the surgical hazards of amputation of the uterus would have been greatly increased by the use of general anaesthesia. Here the amputation was successfully performed under infiltration, but epidural could also have been used.

Schedule 3.—The 3rd Schedule applies to bovines and again general anaesthesia is required.

In the writer's experience bovine ovariotomy is not performed very frequently in Britain, but it can be carried out painlessly and efficiently under paravertebral lumbar or infiltration anaesthesia of the right lumbar fossa and by painting the mesovarium with cocaine as has been done in the mare. The speying of cows as compared with heifers may be performed more easily by means of an epidural when the vaginal route is used, general anaesthesia appearing to be unnecessary.

When amputation of the mammary gland is indicated, the operation may be performed satisfactorily under spinal anaesthesia with or without pre-operative chloral narcosis. Frank (1947) mentions epidural anaesthesia for this operation.

While discussing bovine anaesthesia it is a source of wonder and amazement to the students of this college that in Britain to-day one can perform a rumenotomy on the left side under only local anaesthesia, but if the surgeon wishes to perform a laparotomy he is obliged to use general anaesthesia. This constitutes the greatest anomaly of the whole Act, for surely if local anaesthesia is sufficient for the left side it is also sufficient for the right flank approach, as in caesarean section in cattle, especially if the surgeon decides that to render the animal unconscious would increase the risks to both mother and foetus.

Schedule 5.—No comment is offered on Schedules 4 and 6, but in Schedule 5 the same objection applies to docking the tail and clipping or rounding of the ears of animals over six months old as was mentioned under castration in Schedule 2.

Amputation of the digit in the bovine is now frequently performed in veterinary practice, yet no mention is made of it in the Act.

Sheep, goats and pigs are not protected at all, yet the first paragraph of the Act reads, "An Act to make further provision for the Protection of Animals from Cruelty."

According to para. 3, the Board of Agriculture and Fisheries has the power to amend the Act and it is felt that if these notes and comments, either directly or indirectly, stimulate interest sufficiently to have the Act revised or at least reviewed, then the small amount of time spent in their compilation will have been well worth while.*

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[* The N.V.M.A. since 1944-45 has been active in this matter, protesting against piecemeal revision of the Act. As recorded in the Annual Report for 1946-47, "The reply received from the Ministry of Agriculture stated that the amendment of this Act in the directions suggested by the Association would need Parliamentary sanction and that it was unlikely that there would be any opportunity of introducing such a Bill in the near future. It was felt by the Ministry, therefore, that it would be desirable to defer a discussion on the matter until there was some possibility of taking effective action."

The question has remained under consideration by an *ad hoc* Committee of the Association, and the views of our readers will be welcomed.—*Editor.*]

Weekly Wisdom

We may smile, if we will, at the sentiment of other days, but the smile is envying rather than mocking.—*Times* notice of "The Late Joys" (Players' Theatre).

CLINICAL COMMUNICATIONS

THE REPAIR OF CORNEAL INJURIES IN THE DOG BY CONJUNCTIVAL KERATOPLASTY

WILLIAM HENDERSON, M.R.C.V.S.,

HAMPTON

An operation for the relief of ulcerative keratitis, first performed in 1899 by Scholer in Berlin, consisted of forming a conjunctival flap over the ulcer by dissecting the conjunctiva from the sclera, pulling it over the cornea, and fixing with sutures. Conjunctival keratoplasty is indicated whenever there is need for an immediate blood supply to the avascular surface of the cornea.

More recently, Dr. Aaron J. Stern, of Waterbury, Connecticut, has described his technique for the conjunctival flap operation.[1] With it he has obtained a high percentage of successful results. Dr. Stern states that he first heard the operation described by Dr. Ludius, of Hartford, Connecticut, about seven years ago, but he has since seen no reference to it in the literature.

Dr. Stern writes: "Because of the high incidence of hernia of Descemet's membrane following simple ulcerative keratitis and the comparative simplicity of the flap operation, I routinely resort to surgery when treating corneal ulcers. Results are much better than with cauterisation, medical treatment, or both. Often dogs are presented for the first time after the hernia is established. In treating these cases with the conjunctival flap operation, the healing time and the return of normal contour is greatly shortened, and, more important, enucleation is less often the end indication."

Recently, a spaniel, aged about five, was brought to me with a laceration of the eyeball between the pupil and the inner canthus, the injury having taken place some months before. There was a rupture of Descemet's membrane, and a portion of iris was protruding. The eye had been a source of distress to the dog over this period, and personally I thought that enucleation was the only answer. The owner was very reluctant to have the eye removed, and adopting Dr. Stern's technique I carried out fixation of the conjunctival flap.

Deep anaesthesia was induced with nembutal, and the eye was irrigated with a saturated sulphathiazole solution (60 mg. to 100 c.c.) The protruding portion of iris was trimmed off. The upper bulbar conjunctiva was nicked at a point midway between the canthi. The point of the iris scissors was introduced into the nick and the incision was carried first towards one canthus and then towards the other for about $\frac{3}{8}$ in. (Fig. 1). The width of the bridging flap depends, of course, on the size of the defect that one has to cover. Grasping the cut edges of the conjunctiva with forceps, two parallel incisions were cut with the iris scissors, carrying the incisions back through the bulbar conjunctiva into the palpebral conjunctiva, close to its junction with the upper eyelid (Fig. 2).

The conjunctival flap was thus freed for fixation, and the free edge of the flap was now sutured to the lower bulbar conjunctiva using three sutures of 4/0 catgut (Fig. 3). The nictitating membrane was pulled out of the way by grasping it with forceps. The last step in this simple operation was to fix the eyelids with four interrupted sutures using the same catgut.

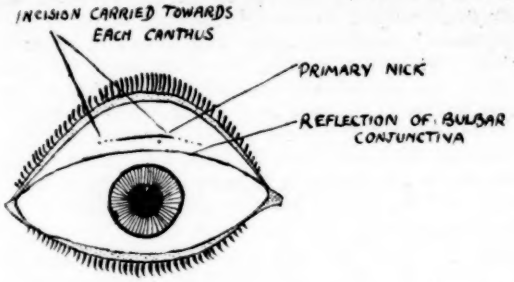

FIG. 1

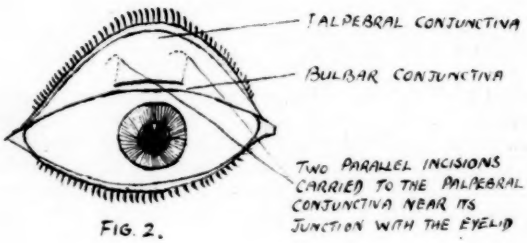
PALPEBRAL CONJUNCTIVA
BULBAR CONJUNCTIVA
TWO PARALLEL INCISIONS CARRIED TO THE PALPEBRAL CONJUNCTIVA NEAR ITS JUNCTION WITH THE EYELID

FIG. 2.

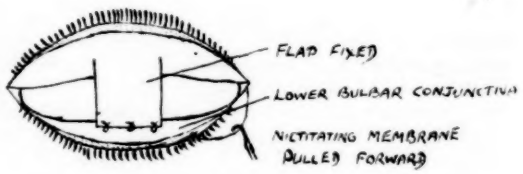

FIG. 3.

The sutures were left in place until they sloughed after seven days. It is important that sutures should not be removed too early, and they should be allowed to slough. Should one fail to do so, it can be snipped. Bandaging the eye after the operation is quite hopeless—my experience is that very few dogs will tolerate an eye bandage. It is up to the owner to co-operate by assiduous after-care. In this case the dog was most carefully watched, but in fact he did not attempt to interfere with the sutures. A less phlegmatic animal might easily ruin the result by too early release of the sutures. In such a case one might resort to the use of an Elizabethan collar to prevent scratching.

Nothing further was done to the flap, which healed in proper adjacency. For a few days butyn sulphate and Metaphen ophthalmic ointment was introduced into the eye, and after a fortnight the eye had a normal appearance with the exception of a triangular unpigmented area showing through the cornea. Up to this time (three months later) no further trouble has been reported by the owner.

Dr. Stern reports that deep scratches, gouges and through-and-through lacerations of the cornea respond dramatically to the operation. Certainly the result in this case was most gratifying.

REFERENCE

1 Stern, A. J. (1950.) *J. Amer. vet. med. Ass.* **117.** p. 44.

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BRACKEN POISONING

BY

DAVID McLAUCHLAN, M.R.C.V.S.,

STRANRAER

The work of Weswig, Freed and Haag (1946) and that of W. C. Evans and E. T. Rees Evans (1949) on bracken poisoning and its association with vitamin B_1 deficiency gave the veterinary profession a possible method of treatment for this condition.

It is proposed here to describe an outbreak of bracken poisoning and the treatment carried out.

Subjects.—Twelve Ayrshire heifers, one year three months to two years old.

History.—Those animals were part of a herd of 79 attested, Ayrshire heifers which had been grazing on rough pasture surrounding a small wood in which bracken was prolific and to which the animals had access since June, 1950. On September 19th three of the animals were noticed to be ill and advice was sought.

Symptoms.—The first symptoms noticed were that the animals segregated themselves from the herd and had stopped grazing. Examination revealed in the three animals examined on September 19th and those examined subsequently, a high temperature (105° to 107° F.), weak pulse, accelerated respirations, inappetence, salivation, grinding of the teeth, diarrhoea with slight admixture of blood.

Examination of the nasal cavities revealed the presence of small papules about the size of a lentil, the raised part of each papule being white and surrounded by a haemorrhagic zone roughly ½ cm. in diameter. When touched, the raised part detached itself and a slight haemorrhage resulted.

Some of the subjects showed ulceration of the anterior tip of the tongue and hard palate, so accounting for the salivation.

A diagnosis of bracken poisoning was made.

Treatment.—The affected animals were housed and the remainder of the herd was at once moved to fresh pasture free of bracken. The herd was carefully observed several times each day and any animal of which the owner was suspicious was brought in for examination. In all, 12 animals were treated.

From the above symptoms it will be noted that there was a complete absence of the nervous symptoms such as are displayed in bracken poisoning in the horse and experimentally produced in rats with which one usually associates an avitaminosis B_1. Instead, the condition seemed to resemble pellagra in the human and "blacktongue" in dogs, although the hyperpyrexia seen in bracken poisoning in cattle is absent in these two conditions. In view of this it was decided to treat the animals with nicotinamide.

Each animal, after a diagnosis was made, was given 600 mg. of nicotinamide per os and this was continued once daily. Temperatures were recorded night and morning and the results are shown in the accompanying table

Heifer	Date	Temperature, ° F. a.m.	Temperature, ° F. p.m.	Treatment	Remarks
No. 1	19.9.50	106·2	105·2	600 mg. nicotinamide per os.	
	20.9.50	103	101·3	" "	
	21.9.50	101·2	101	Nil	Commenced feeding.
	22.9.50	101	101	"	Turned out.
No. 2	19.9.50	106	106	600 mg. nicotinamide per os.	
	20.9.50	104·3	104·3	" "	
	21.9.50	102	102	" "	
	22.9.50	101·1	101	Nil	Commenced feeding.
	23.9.50	101	Not recorded	"	Turned out.
No. 3	19.9.50	105	103	600 mg. nicotinamide per os.	
	20.9.50	101·3	102	" "	
	21.9.50	101	101	Nil	Commenced feeding.
	22.9.50	101·2	Not recorded	"	Turned out.
No. 4	20.9.50	106·3	105·4	600 mg. nicotinamide per os.	
	21.9.50	103	105·1	" "	Commenced feeding.
	22.9.50	101	101	Nil	Turned out.
No. 5	20.9.50	105·2	105·3	600 mg. nicotinamide per os.	
	21.9.50	105	104	" "	
	22.9.50	101	101·2	Nil	Commenced feeding.
	23.9.50	101·2	101·2	"	Turned out.
No. 6	21.9.50	106·1	104·3	600 mg. nicotinamide per os.	
	22.9.50	102·1	102·2	Nil	Commenced feeding.
	23.9.50	102	102	"	Turned out.
No. 7	21.9.50	104·2	103	600 mg. nicotinamide per os.	
	22.9.50	103	101	" "	Commenced feeding.
	23.9.50	101	101·2	Nil	Turned out.
No. 8	21.9.50	105·2	105·4	600 mg. nicotinamide per os.	
	22.9.50	103·4	101	" "	
	23.9.50	101	101	Nil	Commenced feeding and turned out.
No. 9	23.9.50	106	105·4	600 mg. nicotinamide per os.	
	24.9.50	104·4	104	" "	
	25.9.50	102·4	104	" "	Commenced feeding.
	26.9.50	101·2	101·2	Nil	Turned out.
No. 10	23.9.50	107	102·4	600 mg. nicotinamide per os.	
	24.9.50	101	102	Nil	Commenced feeding.
	25.9.50	101·2	101	"	
	26.9.50	101	Not recorded	"	Turned out.
No. 11	24.9.50	106	106	600 mg. nicotinamide per os.	
	25.9.50	105·2	102·2	" "	Commenced feeding.
	26.9.50	104·1	103·1	" "	
	27.9.50	102·5	101·1	Nil	
	28.9.50	101	Not recorded	"	Turned out.

No. 12	24.9.50	106	105·4	600 mg. nicotinamide per os.	
	25.9.50	105	105	" "	
	26.9.50	105	104·2	" "	
	27.9.50	101·2	103·3	" "	Commenced feeding.
	28.9.50	101·3	Not recorded	Nil	Turned out.

It will be noted from the above table that only in one case was it necessary to continue dosing after the third day and that as soon as the animals' temperature came within the normal range they commenced feeding.

After being turned out, each animal was observed carefully for several days and no abnormal happenings were noted.

Several other isolated cases of bracken poisoning, all in bovines between one and two years of age, with the exception of one, a five-month-old calf, have been treated in the same manner since August, 1949, and the results have been satisfactory.

References

Evans, W. Charles, & Evans, E. T. Rees. (1949.) *Vet. J.* **105.** 175–185.

Weswig, P. H., Freed, Anna M., & Haag, J. R. (1946.) *J. Biol. Chem.* **165.** 737.

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SUSPECTED BRACKEN POISONING IN SHEEP

BY

ANGUS FOGGIE,

Animal Diseases Research Association, Moredun Institute, Edinburgh

Although bracken poisoning is of common occurrence in cattle, only one reference (Fletcher, 1944) to the disease in sheep has been traced. It therefore appeared desirable to record the following observations.

On July 24th, 1950, the carcase of a Cheviot ewe from the Hawick district was submitted for *post-mortem* examination. The ewe had not been thriving for a week, had developed a " black scour " and had died on July 23rd. Macroscopic lesions were confined to the abomasum and the first foot of the duodenum which were intensely inflamed. This hyperacute inflammation was most marked along the crests of the folds of the abomasal mucous membrane which were bright red. The small intestine was empty. The large intestine was filled with a brownish-black fluid which was assumed to be altered blood from haemorrhage in the abomasum. Examination of the rumen content showed a considerable number of fern fronds. A sample of rumen content was submitted to Dr. A. Nelson, of the Botany Department, Edinburgh University, who reported that about 2 per cent. of the sample consisted of bracken fronds. Microscopical examination of a spleen smear failed to show the presence of bacteria.

A second ewe on the same farm which died suddenly on July 26th was received for examination on July 28th. Although putrefaction was advanced in this case, inflammation of the abomasum and duodenum was obvious and bracken fronds were again detected in the rumen content.

A visit to the farm showed that the affected group of ewes were grazing on a very poor quality grass hill, containing a large proportion of moss and an area of about 40 acres of uncut bracken. At night the sheep were brought in to a field of old grass of poor quality containing clumps of rushes.

Evans and Evans (1949) have shown that extracts of bracken have the effect of destroying the vitamin B_1 complex in the animal body. A supply of vitamin B_1 was left with the shepherd with instructions that, should other cases occur, a dose of 25 mg. should be given subcutaneously followed by a further 25 mg. in 48 hours. By September 14th, however, no further cases had developed.

These cases suggest that the sheep is susceptible to bracken poisoning. The comparative rarity of the condition is probably a reflection of the selective grazing habits of the sheep. In the outbreak here described the flock was exposed to an unattractive diet of low nutritional value and certain individuals appear to have supplemented this diet with young green bracken fronds in sufficient quantity to set up the bracken poisoning syndrome.

Acknowledgment.—I wish to thank Dr. A. Nelson for the report on the composition of the rumen contents.

References

Evans, W. C., & Evans, E. T. (1949.) *Vet. J.* **105.** 175.

Fletcher, J. M. (1944.) *Vet. Rec.* **56.** 478.

ABSTRACTS

[The Soft Palate (Palatinum Molle) as a Cause of Dyspnoea in Two Race Horses. Quinlan, J., Van Rensburg, S. W. J. & Starke, N. C. (1950.) *J.S.Afr. V.M.A.*, **20.** 125–217.]

Two six-year-old thoroughbred stallions had won races up to and at the age of five years, but then developed respiratory noise and dyspnoea after galloping a distance of about two furlongs. Prolonged forced exercise produced distress, but the noise disappeared immediately they came to rest. They did not " grunt " when tested. Since the sounds were expiratory, " whistling " or " roaring " (laryngeal hemiplegia) were ruled out, and some form of pharyngeal obstruction was suspected. The rhino-laryngoscope revealed nothing abnormal in either the pharynx or larynx, so it was decided to investigate further by means of a laryngeal incision extending from the body of the thyroid cartilage anteriorly to the first tracheal ring posteriorly. Anaesthesia was induced by chloral hydrate intravenously, followed by chloroform inhalation.

Examination of the larynx proving negative, it was assumed that the noise could be caused only by vibration of the soft palate, and it was decided to remove a portion of it.

By applying curved forceps to the free border of the palate to a depth of 2·5 cm., and cutting around the forceps with curved scissors, the central portion, approximately 4·5 to 5·0 cm. wide by 3·5 to 4·0 cm. deep, was resected. Haemorrhage was slight and required no attention.

Healing of the wounds and recovery followed a normal course. Walking exercise was given daily for two months. At the end of this period both subjects were galloped and were found to be sound. They have since returned to racing, showing no sign of the previous respiratory noise or dyspnoea.

The authors find it difficult to account for the condition, encountered for the first time. Assuming the diagnosis was correct, it is suggested that in all probability it was a local degeneration of the fibres of the pharyngeal branch of the vagus supplying the palatinus and levator palati muscles. The former shortens the palate, and the latter by raising the soft palate closes the posterior nares during the act of deglutition.

C. F.

[**Tendon Healing.** Armistead, W. W. (1950.) *N. Amer. Vet.* **31.** 520–522.]

Severance of a tendon invariably results in some retraction of its divided ends. If allowed to heal naturally, the bridging of this gap lengthens the tendon which is usually corrected by a compensatory shortening of its muscle, thereby restricting its contractile power. Healing is often accompanied by adhesions, particularly of the distal segment, and if the tendon is divided where it is surrounded by a sheath there is a tendency for the ends to heal over, making union difficult to re-establish. Adhesions which have to be broken down can be prevented from recurring by interposing a layer of fatty tissue or muscle fascia. In the dog, human and bovine fibrin film have been used successfully in this connection.

Tendons which have suffered contusion or partial rupture undergo softening during repair, and unless an adequate period of rest is given they may subsequently rupture completely or develop a chronic tendinitis.

For successful tendon surgery the author emphasises a number of requirements. Tendon damage by forcipressure must be minimal if healing is not to be retarded. Adopting the orthodox methods of coaptation of divided tendons, the finest gauge suture material consistent with strength must be used. To diminish tension on the sutures it is recommended that the proximal segment of the tendon should be anchored to the overlying skin by means of steel wire and a button. The wire is removed in approximately two weeks. Whenever practicable, repaired tendons should be supported for the first two to three weeks by means of a plaster cast or splints.

C. F.

REVIEW

[**Farming and Mechanised Agriculture.** 4th Edition. (1951.) 407 pages. Price 25s. Advisory Editor :— Sir. R. George Stapledon, C.B.E., M.A., F.R.S. Todd Reference Books. London. Distributed by George Harrap & Co., Ltd., London, W.C.1]

In this reference book will be found brief accounts of developments in research, marketing, legislation, Government services and other information of value to the farmer, to the veterinary surgeon and to all those who study agriculture. The sections on agricultural legislation and policy, and on agricultural education, are by Isabella Williams. Useful directories of educational and research institutions and of Government and public bodies are included and the addresses, telephone numbers and personnel are given; the lists are long and comprise those which bear directly or indirectly on agriculture in this country and in the Commonwealth. The official and non-official bodies which are connected in some way with agriculture give brief statements of their relevant activities. In the official bodies section we may read an account of the work of the Ministry of Agriculture and Fisheries with tabular matter concerning prices, or we may find interest in the bearing that the British Electricity Authority has on agricultural practice. The Royal Agricultural Society of England give their statement under the unofficial bodies and amongst the large number who contribute are the Men of the Trees, a fellowship of tree lovers; the breadth of the range can thus be assessed.

Other directories and lists follow and there are tables and statistics of acreage, of crops and livestock in this country. Artificial insemination centres, books, periodicals and films of agricultural interest are all classified and placed in the appropriate column. The book is therefore full of information which is both valuable and necessary for those who have even slight associations with agriculture.

Agriculture has been practised in Britain for at least 2,000 years and to-day it is our most important industry. This is clearly the view of Sir R. George Stapledon, who has written the first section on the agricultural situation. He proceeds to outline the methods whereby we may increase the food supply in this country and he pleads for the best and wisest use of all the acres within our territory. We have been foolish and are still being unwise; the increase in the population, the depletion of the essential nutrients of the soil and the devastation caused by erosion throw our basic industry into relief. It is now well known that population has a tendency to increase faster than food, but this was not recognised when the rapidly expanding population of Europe was able to derive the bulk of its food from North America. The food situation is dependent on the land which is capable of food production. At the present time there are about two acres of cultivated land available in the world for each individual, and, according to world averages, it takes two and a half acres to provide enough food for a single person. The position is therefore urgent and the fate of man will be decided in the present century. To be conversant with the needs of food production and the activities of agriculturalists is needful and this book supplies much of the essential information.

QUESTIONS IN PARLIAMENT

Milk (Quality)

Mr. Hurd (March 19th) asked the Minister of Food if he will consult with the Milk Marketing Board in order to arrange for the payment of milk on a quality basis with special regard to butter-fat and solids-not-fat.

Mr. F. Willey: Now that milk is in good supply I agree that our efforts must be directed to getting better milk. My right hon. Friend is considering the ways of achieving this aim.

. . . . . .

Milk (Consumption)

Mr. Hurd (March 19th) asked the Minister of Food how the amount of milk drunk in the winter of 1950-51 compares with the amount consumed in the two previous winters.

Mr. F. Willey: Consumption of liquid milk in the United Kingdom in the winter of 1950-51, that is, October, 1950, to March, 1951, inclusive, is provisionally estimated at 779,000,000 gallons. The comparable figures for the winters of 1949-50 and 1948-49 are 755,000,000 gallons and 725,000,000 gallons respectively.

. . . . . .

Farm, Stanhope (Purchase)

Sir W. Darling (March 20th) asked the Secretary of State for Scotland under what circumstances the Animal Breeding and Genetics Research Organisation are taking over the farm of Mr. John W. Scott, Stanhope, Broughton, Biggar; and if any opportunity was given to this tenant farmer to have a renewal of his tenure.

Mr. McNeil: The Agricultural Research Council purchased the farm of Stanhope in 1949, with a view to setting up under the control of the Animal Breeding and Genetics Research Organisation —an organisation established by the Council in 1945, with headquarters in Edinburgh—a field station for the purposes of research into the breeding of black-face sheep. In these circumstances no opportunity has been given to the tenant to renew his present lease, which expires at Martinmas, 1952. The termination of the tenancy is, however, subject to the provisions of the Agricultural Holdings (Scotland) Act, 1949, and in this connection, an application by the Council for my consent to the operation of a notice which they propose to give to the tenant to quit the farm at the expiry of the lease is under consideration.

Fowl Pest

Mr. Bossom (March 20th) asked the Minister of Agriculture how many fowls were ordered to be killed by his Department due to the existence of or suspected existence of fowl pest, in England and Wales and Scotland, respectively, in November, December, 1950, and January, February, 1951.

Mr. T. Williams: The numbers of fowls that were slaughtered by the orders of the Ministry of Agriculture in consequence of outbreaks of fowl pest during the four months November, 1950, to February, 1951, were as follow:

Month	England and Wales	Scotland
November, 1950	3,020	—
December, 1950	49,530	—
January, 1951	103,870	130
February, 1951	59,000	3,200
Totals	215,420	3,330

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New Slaughterhouses

Sir W. Smithers (March 21st) asked the Minister of Food why he proposes to spend £2,800,000 on new slaughterhouses.

Mr. Webb: I do not know where the hon. Member gets his figure of £2,800,000 from. I hope, however, to make an early statement about the building of new slaughterhouses, the need for which is urgent and widely recognised by local authorities and trade interests.

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Meat (Examination)

Mr. Garner-Evans (March 22nd) asked the Minister of Food what evidence he has received of meat from diseased animals being sold on the ration; and whether he will give an estimate of the amount.

Mr. Webb: I have received no evidence of this sort. Very careful examination of meat is made by competent officers of the local authority in whose district the meat is distributed.

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Cruelty to Wild Animals (Report)

Mr. Anthony Greenwood (March 22nd) asked the Secretary of State for the Home Department when it is proposed to publish the report of the enquiry into cruelty to wild animals.

Mr. Ede: I have not yet received the report but I understand that it is likely to be submitted before the end of next month.

NOTES AND NEWS

Diary of Events

Apr. 5th.—Meeting of the Lincolnshire and District Division, N.V.M.A., at Grantham (George Hotel), 2.15 p.m.

Apr. 5th.—Meeting of the Central Veterinary Society, at the Royal Veterinary College, N.W.1, 6 p.m.

Apr. 6th.—Meetings of the Association of Veterinary Teachers and Research Workers, at the Royal Veterinary College, Camden Town, N.W.1. (Ordinary General Meeting 10 a.m.; Annual General Meeting, Southern Region, 12.30 p.m.).

Apr. 6th.—Meeting of the Biochemical Society, in the Department of Physiology, University of Bristol, 2 p.m.

Apr. 7th.—Annual Dinner of the B.R.X. Club, at the Royal Veterinary College, Camden Town, N.W.1.

Apr. 9th and 10th.—Annual Congress of the Laboratory Animals Bureau, in the University of Liverpool.

Apr. 11th.—Meeting of the Scottish Branch, N.V.M.A., at Glasgow (George Hotel, 235, Buchanan Street), 2.15 p.m.

Apr. 11th.—Special Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, London, W.C.1, 2 p.m., to be followed by a meeting of the Editorial Executive.

Apr. 11th, 12th, and 13th.—Meetings of Committees and Council, R.C.V.S. at 10, Red Lion Square, London, W.C.1.

N.V.M.A. Meetings in London

Monday, April 16th:
2 p.m. Organising Committee
4 p.m Parliamentary and Public Relations Committee.

Tuesday, April 17th:
10 a.m. Veterinary State Medicine Committee.
12 noon Home Appointments Committee.
2.15 p.m. General Purposes and Finance Committee.

Wednesday, April 18th:
11 a.m. Council

Apr. 18th.—Meeting of the Section of Comparative Medicine, Royal Society of Medicine, at 1, Wimpole Street, London, W.1.

Apr. 19th and 20th.—Meeting of the Association of Veterinary Teachers and Research Workers (Northern Region) at Newcastle-on-Tyne. (See Notice.)

Sept. 23rd-29th.—Sixty-ninth Annual General Meeting and Congress of the National Veterinary Medical Association, at Eastbourne.

R.C.V.S. Examinations

Wednesday, May 2nd.—Animal Management Examination commences at London.

Thursday, May 10th.—Entries for D.V.S.M. Examination due.

Tuesday, May 15th.—Pharmacology, etc., Examination (Revised Syllabus). Written Examination.

Thursday, May 17th.—Pharmacology, etc., Examination (Revised Syllabus). Orals and Practicals (London and Dublin).

Thursday, June 7th.—D.V.S.M. Written Examinations commence at Edinburgh.

Monday, June 11th.—D.V.S.M. Oral Examinations commence.

Thursday, June 21st.—M.R.C.V.S. Written Examinations.

Friday, June 22nd.—M.R.C.V.S. Written Examinations.

QUARTERLY MEETINGS OF COUNCIL AND STANDING COMMITTEES N.V.M.A. DURING 1951

N.V.M.A. Meetings in London
[*See above*]

The following dates are given for remaining meetings this year, chiefly to give members plenty of time to reserve hotel accommodation.

In Edinburgh

Wednesday, July 11th:
11 a.m. Home Appointments Committee.
2 p.m Organising Committee.
4 p.m. Parliamentary and Public Relations Committee.

Thursday, July 12th:
11 a.m. Veterinary State Medicine Committee.
2 p.m. General Purposes and Finance Committee.

Friday, July 13th:
11 a.m. Council.

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VICTORIA VETERINARY BENEVOLENT FUND

"In Memory of Mrs. Mary King"

The Secretary gratefully acknowledges the receipt of donations from the following:—

Mrs. E. J. Baker, Mrs. K. Bennett Baker, Mr. J. I. Bernard, Mrs. S. M. Bowditch, Mr. Frank Clifford, Mrs. Winifred G. Geer, Mrs. M. M. James, Dr. and Mrs. S. J. Ormond, Mr. J. Pasfield, Mrs. C. J. Richardson, Mr. Clement Smith, Mr. M. Wilkinson, Dr. and Mrs. W. R. Wooldridge, Mrs. N. E. Wright and Mr. and Mrs. Cranstoun Young.

Total received to date (March 19th, 1951), £26 4s.

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PERSONAL

Ayliffe.—On Monday, March 5th, 1951, at Cullompton, Devon, to Olive, wife of A. R. Ayliffe, M.R.C.V.S., a daughter—Anna Elizabeth.

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Marriages.—Gibson—Kress.—On February 24th, 1951, at the Church of Corpus Christi, Tring, Edward Gibson, B.Sc., M.R.C.V.S., younger son of Mr. and Mrs. W. W. Gibson, of Chingford, London, to Helena Joan, only daughter of Mr. and Mrs. C. Kress, of "Dell View," Wigginton, Herts.

PENHALE—CHITTENDEN.—On March 24th, 1951, at the Church of Saints Peter and Paul, Chingford, Essex, William George Allin Penhale, M.R.C.V.S., only son of Mr. R. H. Penhale, M.R.C.V.S., and Mrs. Penhale, of Holsworthy, Devon, to Pamela Margaret Chittenden, M.R.C.V.S., only daughter of Mr and Mrs. W. R. Chittenden, of Chingford, Essex.

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Dr. W. R. Wooldridge has been re-elected Chairman of the University of London Conservative and Unionist Graduates' Association.

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International Hockey.—We are interested to learn from Mr. Malcolm Armfield, M.R.C.V.S., whose sister Isabel—a former international—is now President of the Ladies' All-England Hockey Association, that he was present with Mr. T. J. Brain, M.R.C.V.S., of Cheltenham—now aged 80 years and still in harness—when the latter's granddaughter played another fine forward game for England at Bristol, where the Welsh team was beaten by 10 goals to nil.

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Will.—AUSTERBERRY, Mr. Frederick, of Blackpool, veterinary surgeon (net value, £54,331), £54,675.

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LEGAL NOTES

"Another Successful R.C.V.S. Prosecution"

In our issue of last week we made brief reference, under the above heading, to the summonses successfully brought by the Royal College against Frank Palmer, of 1, Mandeville Road, Isleworth, for unlawfully practising veterinary surgery.

In its report of the case the *Middlesex Chronicle* of March 16th states that the defendant appeared at Brentford Court to answer two summonses brought by the Royal College of Veterinary Surgeons, who alleged that not being a person in the Register of Veterinary Surgeons or on the Supplementary Veterinary Register he did on September 12th and 13th unlawfully practise veterinary surgery by trading for reward, by diagnosing, prescribing and giving animal medicine to a dog. He pleaded not guilty.

Mr. Robert Fortune, Counsel for the College, said a dog owned by Mrs. Hilda Florence Scarlett, of 33, Selkirk Road, Whitton, which had been boarded at Palmer's Animal Clinic and Surgery, was taken ill after returning to its home. Palmer, who was called, diagnosed that it was suffering from a chill. He dosed the dog with medicine but it got worse and Mrs. Scarlett called in a veterinary surgeon, who found the dog to be in an advanced stage of distemper with pneumonia. The dog died within a few days.

Palmer said he had been treating animals on and off for 22 years as an unqualified practitioner. Major (the dog) was highly excitable and Mr. and Mrs. Scarlett had given him tablets to give to it while it was in his care. His children used to exercise it. He thought the 25s. a week he charged for boarding it was hardly adequate for the responsibility and hard work put into caring for the dog. Its illness was very rapid.

The Bench found defendant guilty and told him he would be fined £20 on each summons with £10 10s. costs with the alternative of two months' imprisonment on each, the sentences to run concurrently.

Palmer told the Bench he refused to pay the fine.

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Imprisonment for Neglect of Exposed Horses and Cattle.—The Glasgow Record and Mail reports a shocking case of neglect of animals wintered in the open in Banffshire. At the Banff Sheriff Court, on March 13th, William Hendry Stewart, cattle dealer, "Glencottar," Seafield Avenue, Keith, was sentenced to three months' imprisonment after being found guilty on a charge of wantonly omitting to provide three horses and four cattle with adequate food and shelter in a field near Keith during part of December and January.

Mr. Robert Cowie, M.R.C.V.S., said the animals had been surviving on their body tissues for some time and death would have been inevitable if nothing had been done for them.

Evidence was given that the horses were pawing the ground, which was covered with snow, in an effort to get food. One of the heifers was so thin and emaciated that the wind was blowing her over. Another was found dead. The hair on the left side of her face had been rubbed off and raw flesh was sticking through. All the animals were without food or water of any kind and in desperation were trying to eat whin bushes.

Sheriff Walker said the case was the most callous he had come across for a long time. "Let this prosecution be a warning to those who think fit to keep horses and cattle out in the open during a Banffshire winter without adequate food," he said. "I believe this has come to be done to some extent and it is time it was stopped. Highland cattle are a case apart. People who do this sort of thing will find that they will be getting their own food and shelter at the Government's expense."

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LIVESTOCK FARMING AND THE NATION'S HEALTH*

In the course of an address to the annual meeting of the Central Council of the National Union of Conservative and Unionist Associations, on March 8th, Dr. W. R. WOOLDRIDGE, M.SC., M.R.C.V.S., said that not least among the many grave shortages which seemed inseparable from the present Government was the lack of meat and other health-giving foods. Between the two wars housewives, with the abundance and comparatively low cost of meats, fruits, eggs and milk, were able to prepare satisfying and attractive meals which kept their families active, healthy and happy. The secret of their success lay in the varied and complete nature of the meals they prepared.

It was true that nutritional science had made great progress in indicating the importance of many different constituents of the human dietary, but knowledge had not yet advanced sufficiently to allow even our planners to prepare completely synthetic diets. This seemed to him to be the mistake which our rulers were making to-day. They were endeavouring to give the people diets built up from vitamins and other ingredients instead of supplying them with the many luscious and attractive natural foods which provided all that was necessary for health, vigour and friendly social behaviour.

How could we return to a better way of life? The importation of large quantities of meat was becoming increasingly difficult owing to the rise in the populations of the main meat-producing areas of the world. We could, however, still increase considerably the amount of meat and eggs which were produced in this country if we actively pursued a long-term policy of livestock farming. None would gainsay that our farmers had done extremely well in producing large quantities of milk under present conditions. We could be equally sure that, given suitable conditions, they would also produce large quantities of eggs and poultry meat, mutton, pork and beef. Let them not forget, however, that it took years to produce a beef or milk animal and many months to produce eggs, pork and mutton. Livestock farming was a long-term calling. The farmer must, therefore, be assured that the market and price guarantees which he received to-day would not be whittled down in the future, as was possible under the 1947 Agriculture Act. The Conservative Party must give the farmer the assurance of long-term planning if he was to produce the foods we needed.

Control of disease and an adequate supply of feeding-stuffs were equally important to the livestock farmer. Without freedom from the major epidemic diseases of animals, intensive livestock farming as practised in this island would be almost impossible. High productivity could not be maintained if subjected to the risks involved in the ill-advised importation of infected material from other lands. "This conference well knows the havoc that has recently been created in our poultry industry owing to the importation of poultry meat from countries where fowl pest is prevalent. Apart from the spread of fowl pest to our own poultry the housewife does not wish to purchase imported carcases from poultry affected with disease, even if that disease does not affect human beings."

Farmers should be encouraged to resist other forms of ill-health in their livestock, for it was estimated that, if infertility and other troubles could be avoided, our home food production could be increased each year by some 200,000,000 gallons of milk, 500,000,000 eggs, and enough meat to double the present ration for 10,000,000 people. Research into these problems should be intensified, whether that research were carried out with the assistance of State funds or by independent research institutions.

A further danger to our livestock farming was the continuous reduction in the area of good farmland through the ravages of satellite towns, open-cast coal mining and the armed forces. To counteract these losses a vigorous, permanent and long-term policy for the development of our hill and marginal lands for livestock production was urgent.

The production of eggs, meat or milk was most readily achieved by feeding concentrates to our livestock. Farmers had worked wonders by improving their pasture and other home-grown feeding-

*Address in introduction of a motion calling upon the Conservative Party, when returned to power, to encourage in every way possible a policy of livestock farming. This was accepted, together with an amendment which asked that such a policy should include the maintenance of fertility.

stuffs, but they could not achieve the results which could be obtained if they were able to get imported concentrates. Unfortunately we were told that financial considerations prevented this. Time and again those who knew what they were talking about had urged the Government to spend money, not on imported dairy produce, meat and eggs, but on feeding-stuffs which would give a far higher return in the form of British produce and soil fertility.

Not long ago he listened to a speech by Lord Woolton—"our greatest housewife"—in which he referred to measures which he had planned for increasing the supplies of feeding-stuffs for our livestock farmers immediately the war was over. The result of the 1945 election made it impossible for these plans to be put into effect but clearly the Conservative Party should make them known and be ready to give both farmers and housewives the assurance that they would be implemented as soon as they returned to power. "How much better for us all had the Socialist Government spent £40,000,000 on importing animal feeding-stuffs instead of squandering this sum on ill-conceived and ill-starred ventures such as the groundnuts scheme, the Gambia poultry project and the compensation paid for fowl pest introduced by their own policy." With this £40,000,000 we could have purchased 1,600,000 tons of feeding-stuffs. This would have enab'ed our farmers to produce approximately 265,000 tons of pig products *or* 384,000,000 dozen eggs *or* 800,000,000 gallons of milk. "Thus, instead of providing each of us with 13 lb. of pork or eight dozen eggs or 18 gallons of milk, our Socialist planners have wasted approximately £1 a head of our money for every man, woman and child."

This desperate situation called for an alliance between the consumer and the farmer to create conditions favourable to the production of the fresh nourishing foods—milk, meat and eggs—once so much enjoyed by the people of Britain.

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LONDON VAN HORSE PARADE

The harshness of the weather on Easter Monday did not damp the enthusiasm of either participants "on show" or the thousands of Londoners who came to watch the annual van horse parade in Regent's Park. For this 37th parade 299 singles, eight pairs and three teams—327 horses in all—had been entered, which compares with 345 entries last year. This is very satisfactory considering the difficulties with which owners and drivers have had to contend this year, owing to the very bad weather. Unfortunately a number of regular exhibitors were absent owing to illness among horses and drivers. The horses, which trotted gaily through mist and rain, included Welsh cobs, hackneys, diminutive ponies, and the heavier harness horses. They were pulling a motley collection of vans, carts, trolleys, floats, and light covered wagons, all freshly painted. Dairymen sent more horses than any other tradesmen: they had 105 on show; the greengrocers 66; the bakers 34; and laundry firms 18. Three pearly kings, from Hampstead, Fulham, and Paddington, were congratulated by the judges on the condition of their ponies.

The exhibitors do not compete against each other but against a standard set by the London Van Horse Parade Society, which has organised the event since 1904. On this occasion, after Miss Gladys M. Yule, the President, had distributed the awards, it was seen that nearly all the horses were first class. The judges found the general condition high, in spite of the present feeding difficulties, and there was a marked improvement in the shoeing. Special certificates of merit will be sent to the farriers responsible for the best workmanship. About £360, given by horse-lovers, was awarded in prize money.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Swine Fever:

Norfolk.—Ivy Farm, Buxton, Norwich (Mar. 19th); Fen Cottage, Union Road, Smallburgh; R.A.F. Station, Coltishall, Norwich (Mar. 21st).

Warwicks.—Norton Croft, Norton, Lidsey (Mar. 17th); 233, Barrows Lane, Skeldon, Birmingham (Mar. 21st).

Yorks (E.R.).—Poplar Nurseries, Hull Road, Cottingham; 82, Durham Street, Hull (Mar. 19th); Peasholme Piggeries, Woodmansey, Beverley; Golflinks Allotments, Hull (Mar. 21st).

Yorks (N.R.).—Moorview Piggeries, Burniston Road, Scalby (Mar. 21st).

Yorks (W.R.).—Moorhills Farm, West End, Hatfield, Doncaster (Mar. 19th); Ellercourt Farm, Rawcliffe, Goole (Mar. 21st).

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the N.V.M.A.

FOWL PARALYSIS

Sir,—I have been interested in the recent correspondence in the *Record* on the treatment of neural lymphomatosis by means of intraperitoneal injections of a solution of potassium iodide.

I had the opportunity a year or two ago of trying this line of treatment in a number of outbreaks of this disease, and failed to satisfy myself that the results of the treatment were other than palliative: almost invariably the birds relapsed and died, if they showed any improvement at all.

At the same time a few cases did show remarkable response, and some weeks later two which recovered were sent for observation, in an apparently normal state, to an independent laboratory, together with a description of the previous paralysis and the nerves probably affected. The birds were considered normal by the pathologist, but on subsequent slaughter and *post-mortem* examination they were found to be affected in the nerves corresponding to the previous paralysis. It may be that these iodide injections had some effect in re-establishing the nerve impulses.

Dr. Holman, of Compton, in the *Record* last year, published some results of this type of treatment, and they were consistently unsatisfactory, while Gray, who originally reported on this line of treatment, has claimed good results.

If more frequent injections than two at 24 hours interval are necessary, then I doubt if treatment would ever be an economic proposition, unless in the case of pedigree birds or if the farmer carried them out himself, and this course will find little favour anywhere.

It would be interesting to hear if any other workers interested in this field have had any different results from those outlined above.

Yours faithfully,

Advisory Department, Spillers, Ltd., W. M. McKay.
40, St. Mary Axe,
London, E.C.3.
March 21st, 1951.

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FOETUS IN THE INTESTINE OF THE COW

Sir,—I wonder if any reader would care to comment on the following which was seen recently at the local knackeryard:—

On opening the carcase of a Shorthorn cow which had died about 24 hours previously, the knackerman felt something hard in the large intestine. He opened up the intestine and exposed the complete skeleton of a foetal calf. He showed it to me when I visited the knackeryard the same day and I judged the foetus to be about four months old. It was mixed up with very fluid faeces and the ribs were tied up in a bundle by a band of fibrous tissue. The uterus was quite normal.

The owner informed me that the cow had not been doing well for some time and had been treated on two occasions with potassium iodide for wooden tongue. He was sure that she had been in calf and he thought she had slipped her calf about 14 days previously. Since that time she had got steadily worse until she died.

Yours faithfully,

49, Endless Street, H. L. Pook.
Salisbury.
March 19th, 1951.

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INSUFFLATION OF THE FALLOPIAN TUBES

Sir,—Mr. Kenneth Jobson's letter *re* the above subject in *The Veterinary Record* of March 10th, 1951, is of interest.

Mares.—It is true to say that the leakage of gas through the fallopian tubes is small and sometimes nil; the pressure may act on the closed valves, thereby rendering them more active. Also, the pressure of CO_2 gas in the uterus appears to have a beneficial effect.

I have treated a good number of mares in recent years, with about 50 per cent. successes.

Cows.—I have used the same technique in cows with fair success, using the same apparatus.

I have not seen any undue discomfort in mares or cows.

Yours faithfully,

Boyle, W. Allen Smith.
March 19th, 1951.